

EXHIBIT B

J. STEVENSON KENNEY
Professor
School of Electrical and Computer Engineering
Georgia Institute of Technology
June, 2015

I. EARNED DEGREES

Doctor of Philosophy in Electrical Engineering, Georgia Institute of Technology, December, 1994.
Master of Science in Electrical Engineering, Georgia Institute of Technology, September, 1990.
Bachelor of Electrical Engineering, with Honors, Georgia Institute of Technology, March, 1985.

II. EMPLOYMENT

2011-present	Professor, School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA
1999 – 2011	Associate Professor, School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA
1997 - 1999:	Director of Multicarrier Power Amplifier Engineering, Spectrian, Inc., Sunnyvale, CA
1994 - 1997:	Manager of RFIC Product Engineering, Pacific Monolithics, Inc., Sunnyvale, CA
1991 - present:	Self Employed as J.S. Kenney Consulting, LLC, Atlanta, GA
1988 - 1991:	Sr. Electrical Engineer, Scientific Atlanta, Network Systems Division, Norcross, GA
1985 - 1988:	Electrical Engineer, Electromagnetic Sciences, Inc., Norcross, GA

III. TEACHING

A. Individual Student Guidance

Ph.D. Students Graduated

- 1) Hyunchul Ku, Dec. 2003, Thesis Title: “Behavioral Modeling of Nonlinear RF Power Amplifiers for Digital Wireless Communication Systems with Implications for Predistortion Linearization Systems.” Presently employed as Associate Professor, Konkuk University, Seoul, S. Korea.
- 2) Dongsu Kim, May 2004, Thesis Title: “Monolithic Analog Phase Shifters Based on Barium Strontium Titanate Coated Sapphire Substrates for WLAN Applications.” Presently employed as Senior Researcher, Korean Electronics Technology Institute (KETI), Seoul, S. Korea.
- 3) Youngcheol Park, Aug. 2004, Thesis Title: “Dual-Band Transmitters Using Digitally Predistorted Frequency Multipliers for Reconfigurable Radios.” Presently employed Assistant Professor, Hankuk University, Seoul, S. Korea.
- 4) Wangmyong Woo, May 2005, Thesis Title: “Hybrid Digital/RF Envelope Predistortion Linearization for High Power Amplifiers in Wireless Communication Systems.” Presently employed as Senior Engineer at Avago Technologies, Inc, San Jose, CA.
- 5) Roland Sperlich, August 2005, Thesis Title: “Adaptive Power Amplifier Linearization by Digital Pre-Distortion with Narrowband Feedback using Genetic Algorithms.” Presently employed as Product Line Manager for Consumer & Computing Interface, Texas Instruments, Dallas, TX.

- 6) Jau-Horng Chen, August 2006, Thesis Title: "Wideband Dynamic Biasing of Power Amplifiers for Wireless Mobile Applications." Presently employed as Assistant Professor, School of Electrical Engineering, Taiwan National University.
- 7) Mike McKinley, August, 2008, Thesis Title: "Frequency Domain Measurement Techniques and Figures of Merit in Power Amplifier and Multipath Environments." Presently employed as Design Engineer, Schweitzer Engineering Laboratories, Inc., Pullman, WA.
- 8) Pavlo Fedorenko, August, 2009, Thesis Title: "Phase Distortion in Envelope Elimination and Restoration RF Power Amplifiers." Presently employed as Associate at Bain Consulting, LLP, Atlanta, GA.
- 9) Joonhoi Hur, Ph.D, December, 2010. Thesis title: "A Highly Linear and Efficient Transmitter for Multi-band, Multi-mode Applications." Presently employed as a Staff Engineer by Texas Instruments, Dallas, TX.
- 10) Kun Seok Lee, August, 2011. Thesis title: "Wideband Phase-Locked Loops with High Spectral Purity for Wireless Communications. Presently employed as a Senior Engineer by Marvell Semiconductor, Santa Clara, CA.
- 11) Yan-Yu Huang, May, 2011. Thesis title: "CMOS-Based Amplitude and Phase Control Circuits for Multi-Standard Wireless Communication." Presently employed as an Analog Engineer by Intel Corp. Portland, OR.
- 12) Yongchang Yoon, May, 2011. Thesis title: "Reconfigurable CMOS RF Power Amplifier for Advanced Mobile Terminals." Presently employed as a Senior Engineer by Qualcomm, San Diego, CA.
- 13) Hamhee Jeon, May, 2012. Thesis title: "Highly Efficient Linear CMOS Power Amplifiers for Wireless Communications." Presently employed as a Senior Engineer by RF Microdevices, Torrance, CA.
- 14) Blake Gray, May, 2012. Thesis title: "Design of RF and Microwave Parametric Amplifiers and Power Upconverters." Presently employed as a Senior Applications Engineer by Silicon Creations, Inc. Suwanee, GA.
- 15) Mohammad Omer, May, 2013, Thesis title: "Towards Harmonious Coexistence : Linear and Nonlinear Techniques for Interference Management in RFICs," Presently employed as a Staff Engineer by RIM, Ltd, Waterloo, Ontario, Canada.

Ph.D. Students Currently Advised

	Name	Started in Group	Passed Prelim. Exam	Passed Prop. Exam	Planned Grad.	Research Topic
1)	Mir Masood	Fall 2006	Spring 2006	Spring 2013	Fall 2014	Power Amplifier Linearization
2)	Mikyung Cho	Fall 2009	Fall 2009			Polar Transmitter Architectures
3)	Kathleen Tokuda	Fall 2008	Fall 1999			Analog Predistortion
4)	Juan Pablo Carem	Spring 2013	Fall 2012			Oscillators and Phase-Locked Loops
5)	Hussain Ladhani	Fall 2013				RF Power Amplifiers

M.S. Students (non-Thesis) Graduated

- 1) Shilpa Rege, Dec. 2000. Research topic: Cost modeling and optimization. Presently employed as Senior Consultant, Apprivo Consulting, San Francisco, CA.
- 2) LaKisha Pate, June 2001. Research topic: Cellular base station test bed. Presently employed as Strategic Planning Professional by the U.S. Department of Defense, Washington, DC.
- 3) Sara Zebian, Dec. 2001. Research topic: CMOS voltage multipliers. Presently employed as Hardware Engineer, Google, Inc., Mountain View, CA.
- 4) John Stone, Aug. 2002. Research topic: Variable gain RF amplifiers. Presently employed by ON Semiconductor, Phoenix, AZ.
- 5) Edouard Desautel, Aug. 2002. Research topic: Smart antenna modeling. Presently employed as Global Account Manager Renault Nissan chez Delphi Connection System, Paris, France.
- 6) Kah Mun Low, Fall 2002. Research topics: RF converter design. Presently employed as RF Design Engineer, Nvidia Corp., Dallas, TX.
- 7) Gregory Quillard, Aug. 2003. Research topic: Smart antenna control software. Presently employed as Senior Technical Account Manager, YouTube Corp., Paris, France.
- 8) Marvin Miller, May 2004. RF downconverter for feedback path in a predistortion linearized power amplifier. Presently employed by Harris Corp., Melbourne, FL.
- 9) Dale Douglas, August, 2008, Thesis Topic: "A Simple Estimator for the DC component of the Hajimiri Impulse Sensitivity Function for the Subset of Waveforms found in LC VCOs: System and Simulations." Presently employed as Sr. Principal Engineer by Broadcom, Atlanta, GA.
- 10) Kyle Hershberger, May, 2013. Thesis Topic: "In-Situ S-Parameter Analysis and Applications." Presently employed by Microsemi Corp., Atlanta, GA.

Undergraduate Students Advised

- 1) Matthew Fausto, Aug. 2000-01. Research topic: RFIC design.
- 2) Kay Henry Hill, Spring 2001-02. Research topic: Patent searches for linearization. Received J.D. *cum laude*, George Mason University, 2005. Presently employed as Associate Intellectual Property Attorney, by Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Washington, DC. Also serving as Law Clerk, U.S. Court of Appeals, Federal District.
- 3) Daniel Cleveland, 2002-03. Research topic: Antenna pattern measurement. Presently employed as Process and Quality Engineer, Southern States, Corp., Atlanta, GA.
- 4) June Zhang, Research topic: RF switch matrix assembly and test. NSF Fellow at Stanford Univ., MS ECE, 2009. Presently a Ph.D. student at Carnegie Mellon University, Pittsburg, PA.
- 5) Tanveer Khanijoun, 2004-05. Research topic: Beam forming array assembly and test. Presently employed as Program Manager, Raytheon Corp., El Segundo, CA.
- 6) Leif Berntsen, 2005-06, Research topic: Organic ferroelectric materials. Graduated from Georgia Tech Lorraine, MS ECE 2007. Presently employed by Siemens Corp., Frankfurt, Germany.
- 7) Chao Huang, 2006-07, Research topic: Power amplifier characterization. Presently a graduate student at Georgia Tech.

B. Other Teaching Activities

- 1) University of California, Berkeley Extension, Instructor for a short course entitled "RF Subsystem Design for Wireless Communications," 1996 -1998. This course covered the basics of RF design and wireless systems.
- 2) Guest Lecturer at North Springs High School, Atlanta, GA, September 19, 2002. Discussed careers in science and engineering.

- 3) Georgia Tech Continuing Education, Instructor for a short course "Missile Guidance and Control." Lecture (one-day) title: "Basics of High-Speed Wireless Communications." Offered Feb.5, 2004 and March 4, 2004. This course covered introductory level topics in wireless communications systems design.

IV. SCHOLARLY ACCOMPLISHMENTS

A. Published Books and Parts of Books

- 1) J. S. Kenney, "Nonlinear Microwave Measurement and Characterization," Chapter 4.4 in *The RF and Microwave Handbook*, M. Golio, ed., CRC Press, January, 2001.
- 2) J. S. Kenney, "Nonlinear Microwave Measurement and Characterization," in *Commercial Microwave Components and Circuits Handbook*, M. Golio, ed., CRC Press, October, 2002.
- 3) J. S. Kenney, "Nonlinear Microwave Measurement and Characterization," in *RF and Microwave Circuits, Measurements, and Modeling*, M. Golio, ed., CRC Press, 2008.

B. Refereed Publications

B1. Journal Publications

- 1) J. S. Kenney and W. D. Hunt, "Synthesis of Acoustic Matching Network by Discrete Space Fourier Transform Method," *J. Acoust. Soc. Am.*, Vol. 89, No. 5, pp. 2123-30, May 1991.
- 2) J. S. Kenney and W. D. Hunt, "A Physically-Based Small-Signal Circuit Model for Heterostructure Acoustic Charge Transport Devices," *IEEE Trans. Microwave Theory and Tech.*, Vol. 41, No. 12, pp. 2218-26, Dec. 1993.
- 3) J. S. Kenney, G. S. May, and W. D. Hunt, "Yield Modeling of Acoustic Charge Transport Transversal Filters," *IEEE Trans. Semicond. Manuf.*, Vol. 8, No. 2, pp. 207-13, May 1995.
- 4) A. W. Smith, J. S. Kenney, *et al.*, "Theoretical Calculations of Charge Confinement in a pn-np Heterostructure Acoustic Charge Transport Device," *IEEE Trans. Electron Dev.*, Vol. 42, No. 5, pp. 977-90, May 1995.
- 5) J. S. Kenney and A. Leke, "Power Amplifier Spectral Regrowth for Digital Cellular and PCS Applications," *Microwave J.*, Vol. 38, No. 10, pp. 74-92, Oct. 1995.
- 6) J. S. Kenney and A. Leke, "Design Considerations for Multicarrier CDMA Base Station Power Amplifiers," *Microwave J.*, Vol. 42, No. 2, pp. 76-86, Feb. 1999.
- 7) H. Ku, W. Woo, and J.S. Kenney, "Carrier-to-Interference Ratio Prediction of Nonlinear RF Devices," *Microwave J.*, Vol. 44, No. 2, pp. 154-64, Feb. 2001.
- 8) G. T. Zhou and J. S. Kenney, "Prediction of Spectral Regrowth in Nonlinear Amplifiers," *IEEE Trans. Comm.*, Vol. 50, No. 5, pp. 718-22, May 2002.
- 9) H. Ku, M. D. McKinley, and J. S. Kenney, "Quantifying Memory Effects in RF Power Amplifiers," *IEEE Trans. Microwave Theory and Tech.*, Vol. 50, No. 12, pp. 2843-49, Dec. 2002.
- 10) D. S. Kim, Y. S. Choi, M. G. Allen, J. S. Kenney, and D. Kiesling, "A Wide Bandwidth Monolithic BST Reflection-Type Phase Shifter Using a Coplanar Waveguide Lange Coupler," *IEEE Trans. Microwave Theory and Tech.*, Vol. 50, No. 12, pp. 2903-9, Dec. 2002.
- 11) D. S. Kim, Y. S. Choi, M. G. Allen, and J. S. Kenney, "Monolithic 180° and 360° Analog Phase Shifters Based on Based on BST Coated Substrate," *IEICE Trans. Elect.*, Vol. E-86-8, No. 8, pp. 1607-12, Aug. 2003.
- 12) D. S. Kim, Y. S. Choi, M. Ahn, M. G. Allen, J. S. Kenney, and P. Marry, "2.4 GHz Continuously Variable Ferroelectric Phase Shifters Using All-Pass Networks," *IEEE Microwave and Wireless Component Lett.*, Vol. 13, No. 10, pp. 434-36, Oct. 2003.

- 13) Y. K. Yoon, D. S. Kim, M. G. Allen, A. Hunt, and J. S. Kenney, "A Reduced Intermodulation Distortion Tunable Ferroelectric Capacitor: Architecture and Demonstration," *IEEE Trans. Microwave Theory and Tech.*, Vol. 51, No. 12, pp. 2568-76, Dec. 2003.
- 14) Y. C. Park and J. S. Kenney, "Adaptive Digital Predistortion Linearization of Frequency Multipliers," *IEEE Trans. Microwave Theory and Tech.*, Vol. 51, No. 12, pp. 2516-22, Dec. 2003.
- 15) H. Ku and J. S. Kenney, "Behavioral Modeling of Nonlinear RF Power Amplifiers Considering Memory Effects," *IEEE Trans. Microwave Theory and Tech.*, Vol. 51, No. 12, pp. 2495-2504, Dec. 2003.
- 16) L. Ding, G. T. Zhou, D.R. Morgan, Z. Ma, J. S. Kenney, J. Kim, and C. R. Giardina, "A Robust Digital Baseband Predistorter Constructed Using Memory Polynomials," *IEEE Trans. Comm.*, Vol. 52, No. 1, pp. 159-65, Jan. 2004.
- 17) W. Woo, M. Miller, and J. S. Kenney, "A Hybrid Digital/RF Envelope Predistortion Linearization System for Power Amplifiers," Vol. 53, No. 1, *IEEE Trans. Microwave Theory and Tech.*, pp. 229-237, Jan. 2005.
- 18) Y. C. Park, R. Melville, R. C. Frye, and J. S. Kenney, "Dual-Band Transmitters using Digitally Predistorted Frequency Multipliers for Reconfigurable Radios," *IEEE Trans. Microwave Theory and Tech.* Vol. 53, No. 1, pp. 115-22, Jan. 2005.
- 19) D. S. Kim and J. S. Kenney, "Experimental Investigations of Intermodulation Distortion in Tunable Ferroelectric Phase Shifters," *IEICE Trans. Elect.*, Vol. E88-C, No. 12, pp. 2310-15, Dec. 2005.
- 20) Y. K. Yoon, J. S. Kenney, M. G. Allen, and A. T. Hunt, "Low-loss Microelectrodes Fabricated using Reverse-side Exposure for Tunable Ferroelectric Capacitor," *J. Micromech. Microeng.*, Vol. 16, pp. 225-34, Feb. 2006.
- 21) J. H. Chen, P. Fedorenko, and J. S. Kenney, "A Low Voltage W-CDMA Polar Transmitter with Digital Envelope Path Gain Compensation," *IEEE Microwave and Wireless Lett.*, Vol. 16, No. 7, pp. 428-30, July, 2006.
- 22) M. D. McKinley, K. A. Remley, M. Myslinski, and J. S. Kenney, "Eliminating FFT Artifacts in Vector Signal Analyzer Spectra," *Microwave Journal*, pp. 156-164, October 2006.
- 23) N. Safari, T. Røste, P. Fedorenko, and J. S. Kenney, "An Approximation of Volterra Series Using Delay Envelopes, Applied to Digital Predistortion of RF, Power Amplifiers with Memory Effects," *IEEE Microwave and Wireless Comp. Lett.*, Vol. 18, No. 2, pp. 115-17, February, 2008.
- 24) H. Choi, Y. Jeong, J. S. Kenney, and C. D. Kim, "Cross Cancellation Technique Employing and Error Amplifier," *IEEE Microwave and Wireless Comp. Lett.*, Vol. 18, No. 7, pp. 488-90, July, 2008.
- 25) H. Choi, K. D. Song, Y. Jeong, J. S. Kenney, and C. D. Kim, "Dual-Band Feedforward Linear Power Amplifier for Digital Cellular and IMT-2000 Basestation," *Microwave and Optical Techn. Lett.* Vol. 51, No. 4, pp. 922-26, April, 2009.
- 26) H. Choi, K. D. Song, Y. Jeong, J. S. Kenney, and C. D. Kim, "Propagation Delay Matched CMOS 0.18 μm Frequency Doubler for L-band Application," in *Microwave and Optical Technology Letters*, Vol. 51, No. 7, pp. 1729-32, July 2009.
- 27) H. Choi, Y. Jeong, C. D. Kim, and J. S. Kenney, "Efficiency Enhancement of Feedforward Amplifiers Employing a Negative Group Delay Circuit," *IEEE Trans. Microwave Theory and Tech.* Vol. 8, No. 5, pp. 1116-25, May, 2010.
- 28) H. Choi, Y. Jeong, C. D. Kim, and J. S. Kenney, "Bandwidth Enhancement of an Analog Feedback Amplifier by Employing a Negative Group Delay Circuit," in *Progress in Electromagnetics Research*, Vol. 105, pp. 253-72, 2010.
- 29) B. Gray, J. S. Kenney, and R. Melville, "Analytical Modeling of Microwave Parametric Upconverters," in *IEEE Trans. Microwave Theory and Tech.*, Vol. 58 No. 8, pp. 2118-24, Aug. 2010.

- 30) B. Gray, F. Ramirez, R. Melville, A. Suarez, and J. S. Kenney, "A Broadband Phase-Coherent Degenerate Double Balanced Parametric Amplifier," in *IEEE Microwave and Wireless Comp. Lett.* Vol. 21, No. 11, pp. 607-09, Oct. 2011.
- 31) Y. Y. Huang; W. Wangmyong, H. Jeon; C H. Lee, and J. S. Kenney, "Compact Wideband Linear CMOS Variable Gain Amplifier for Analog-Predistortion Power Amplifiers," in *IEEE Trans. Microwave Theory and Tech.*, Vol. 60, No. 1, pp. 68-76, Jan. 2012.
- 32) Y. Yoon, J. Kim, H. Kim, K. H. An, O. Lee, C.H. Lee, J. S. Kenney, "A Dual-Mode CMOS RF Power Amplifier With Integrated Tunable Matching Network," in *IEEE Trans. Microwave Theory and Tech.*, Vol. 60, No. 1, pp. 77-88, Jan. 2012.
- 33) Y. Y. Huang, H. Jeon; Y. Yoon; W. Woo; C. H Lee, J. S. Kenney, "An Ultra-Compact, Linearly-Controlled Variable Phase Shifter Designed With a Novel RC Poly-Phase Filter" in *IEEE Trans. Microwave Theory and Tech.*, Vol. 60, No. 2, pp. 301-10, Feb. 2012.
- 34) H. Jeon, Y. Park, Y. Y. Huang, J. Kim, K. S. Lee, C. H. Lee, "A Triple-Mode Balanced Linear CMOS Power Amplifier Using a Switched-Quadrature Coupler," in *IEEE Trans. Solid State Circuits*, Vol. 47, No. 9, pp. 2019-32, Sep. 2012.
- 35) B. Gray, M. Ponton, A. Suarez, and J. S. Kenney, "A Phase-Coherent Upconverting Parametric Amplifier," in *IEEE Microwave and Wireless Comp. Lett.* Vol. 22, No. 10, pp. 527-29, Oct. 2012.
- 36) H. Jeon, K.S. Lee, O. Lee, K. H. An, Y. Yoon, H. Kim, K. W. Kobayashi, C.H. Lee, J. S. Kenney, "A Cascode Feedback Bias Technique for Linear CMOS Power Amplifiers in a Multi-Stage Cascode Topology," in *IEEE Microwave and Wireless Comp. Lett.*, Vol. 61, No 2, pp. 890-901. February, 2013.
- 37) Yoon, Y. Kim, H. Lee, C. H., and Kenney, J. S., "An Inductive Antenna Mismatch Recoverable RF Power Amplifier," in *Analog Integrated Circuits and Signal Processing*, Vol. 77, No. 3, pp. 495-502, December, 2013.
- 38) Y. C. Yoon, H. S. Kim, H. W. Kim, K. S. Lee, C. H. Lee, and J. S. Kenney, "A 2.4GHz CMOS Power Amplifier with an Integrated Antenna Impedance Mismatch Correction System," in *IEEE J. Solid State Cir.*, Vol. 49, No. 3. pp. 608-721, March, 2014.
- 39) M. Ponton, A. Suarez, and J. S. Kenney, "Rotary Travelling Wave Oscillator with Differential Nonlinear Transmission Lines," in *IEEE Trans. Microwave Theory and Tech.*, Vol. 62, No. 5, pp. 1149-61, May, 2014.

B2. Conference Publications

- 1) J. S. Kenney and W. D. Hunt, "Acoustic Matching Network Synthesis using Discrete Space Fourier Transforms," in *IEEE 1990 Ultrasonics Symp. Proc.*, Dec. 4-7, 1990, pp. 581-86.
- 2) J. S. Kenney and W. D. Hunt, "A Small-Signal Equivalent Circuit Model for Heterostructure Acoustic Charge Transfer Devices," in *IEEE 1992 Ultrasonics Symp. Proc.*, Oct. 20-23, 1992, pp. 215-20.
- 3) J. S. Kenney and W. D. Hunt, "A Physically-Based Small-Signal Equivalent Circuit Model for Heterostructure Acoustic Charge Transport Devices," in *1993 IEEE MTT-S Int. Microwave Symp. Dig.*, June 14-18, 1993, pp. 1513-16.
- 4) J. S. Kenney, G. S. May, and W. D. Hunt, "Yield Prediction of Acoustic Charge Transport Transversal Filters," in *Proc. IEEE/CHMT Int. Symp. on Elect. Manuf. Tech.*, Oct. 4-6, 1993, pp. 390-95.
- 5) J. S. Kenney, R. D. Briggs, A. W. Smith, E. K. Yurtkuran, J. H. Irby, and W. D. Hunt, "A Heterostructure Acoustic Charge Transport Delay Line for SONET Radio Adaptive Multipath Equalization," in *1994 IEEE MTT-S Int. Microwave Symp. Dig.*, May 23-27, 1994, pp. 1213-16.

- 6) A. Leke and J. S. Kenney, "A New Behavioral Model for Nonlinear Power Amplifiers with Applications in Simulating Spectral Regrowth," in *1996 IEEE MTT-S Int. Microwave Symp. Dig.*, June 18-21, 1996, pp. 1385-8.
- 7) B. Nelson, S. Cripps, J. S. Kenney, and A. Podell, "A High-Efficiency Single-Supply RFIC PHS Linear Power Amplifier with Low Spectral Regrowth," in *1996 IEEE MTT-S Int. Microwave Symp. Dig.*, June 18-21, 1996, pp. 49-52.
- 8) G. Dawe, R. Dixit, M. Golio, B. Ghabbaz, S. Kenney, *et al.*, "The NEMI RF Component Roadmapping Exercise," *Proc. Adv. Techn. Workshop on Wireless Comm.*, Aug. 19-21, 1996, pp. 163-65.
- 9) A. Leke and J. S. Kenney, "Channel Loading Effects on Power Limited Wireless Transmitters Utilizing Discrete Multitone Modulation," in *1997 IEEE MTT-S Int. Microwave Symp. Dig.*, June 8-13, 1997, pp. 1385-8.
- 10) H. Ku, A. Leke, and J. S. Kenney, "Prediction of Output Carrier-to-Interference Ratios from Nonlinear Microwave Components Driven by Arbitrary Signals using Intrinsic Kernel Functions," in *Proc. 2000 IEEE Radio and Wireless Conf.*, Sept. 11-13, 2000, pp. 191-4.
- 11) H. Ku and J. S. Kenney, "Carrier-to-Interference Ratio Estimation of Arbitrary Signals Distorted by Nonlinear Devices," in *56th Automatic RF Testing Group Conf. Dig.*, Nov. 30 – Dec. 1, 2000.
- 12) H. Ku and J. S. Kenney, "Estimation of Error Vector Magnitude Degradation of Nonlinear Microwave Amplifiers from Two-Tone Measurements," in *2001 IEEE MTT-S Int. Microwave Symp. Dig.*, May 22-24, 2001, pp. 17-20.
- 13) W. Woo, L. Ding, G. T. Zhou, and J. S. Kenney, "An RF/DSP Test Bed for Baseband Pre-Distortion of RF Power Amplifiers," in *57th Automatic RF Testing Group Conf. Dig.*, May 25, 2001, pp. 54-60.
- 14) J. S. Kenney, W. Woo, L. Ding, R. Raich, H. Ku, and G.T. Zhou, "The Impact of Memory Effects on Predistortion Linearization of RF Power Amplifiers," in *Proc. of the 8th Int. Symp. on Microwave and Optical Techn.*, June 19-23, 2001, pp. 189-93.
- 15) Y. S. Park, S. Pinkett, J. S. Kenney, and W.D. Hunt, "A 2.4 GHz VCO with Integrated Acoustic Solidly Mounted Resonator," in *2001 IEEE Ultrasonics Symp. Dig.*, Oct. 7-9, 2001, pp. 839-42.
- 16) T. Kenny, Y. C. Park, W.D. Hunt, J. S. Kenney, J. Kosinski, and R. Pastore, "Wideband Programmable SAW Filters," in *2001 Ultrasonics Symp. Dig.*, Oct. 7-9, 2001, pp. 89-92.
- 17) W. Woo and J. S. Kenney, "Mixed-signal Simulation of a Power Amplifier Predistortion Linearization System," in *58th Automatic RF Testing Group Conf. Dig.*, Nov. 29-30, 2001, pp. 101-109.
- 18) D. S. Kim, J. S. Kenney, D. Kiesling, and D. Stollberg, "An S-Band Reflective Phase Shifter – A Design Example using Ferroelectrics," in *2002 Materials Research Soc. Conf. Proc.*, April 1-5, 2002, pp. 154-59.
- 19) L. Ding, G. T. Zhou, Z. Ma, D. R. Morgan, J. S. Kenney, J. Kim, and C. R. Giardina, "A Robust Digital Baseband Predistorter Constructed Using Memory Polynomials," in *Int. Comm. Conf. Dig.*, May 29-31, 2002.
- 20) D. S. Kim, Y. S. Choi, M. G. Allen, J. S. Kenney, and D. Kiesling, "A Wide Band Monolithic BST Reflection-Type Phase Shifter," in *2002 IEEE MTT-S Int. Microwave Symp. Dig.*, June 4-6, 2002, pp. 1471-4.
- 21) H. Ku, M. D. McKinley, and J. S. Kenney, "Extraction of Accurate Behavioral Models from Power Amplifiers with Memory Effects using Two-Tone Signals," in *2002 IEEE MTT-S Int. Microwave Symp. Dig.*, June 4-6, 2002, pp. 139-42.
- 22) S. H. Lee, S. Min, D. S. Kim, S. Dalmia, W. Kim, V. Sundaram, S. Bhattacharya, G. White, F. Ayazi, J.S. Kenney, M. Swaminathan, and R.R. Tummala, "High Performance Spiral Inductors Embedded on Organic Substrates for SOP Applications," in *2002 IEEE MTT-S Int. Microwave Symp. Dig.*, June 4-6, 2002, pp. 2229-32.

- 23) Y.C. Park, W. Woo, R. Raich, J. S. Kenney, and G. T. Zhou, "Adaptive Predistortion Linearization of RF Power Amplifiers using Lookup Table Generated from Subsampled Data," *Proc. 2002 IEEE Radio and Wireless Conf.*, Aug. 11-14, 2002, pp. 233-36.
- 24) E. Desautel, D. S. Kim, J. S. Kenney, and D. Kiesling, "Interference Mitigation in WLAN Networks using Client-Based Smart Antennas," in *Proc. 2002 IEEE Radio and Wireless Conf.*, Aug. 11-14, 2002, pp. 63-66.
- 25) F. Caldwell, J. S. Kenney, and M. A. Ingram, "Design and Implementation of a Switched-Beam Smart Antenna for an 802.11b Wireless Access Point," in *Proc. 2002 IEEE Radio and Wireless Conf.*, Aug. 11-14, 2002, pp. 55-58.
- 26) W. Woo, E. Park, K. U-yen, and J. S. Kenney, "Mixed-Signal Behavioral Simulation of an Envelope Predistortion Linearization System for RF Power Amplifiers," in *Behavioral Modeling and Simulation Workshop Dig.*, Oct. 7-8, 2002, pp. 66-70.
- 27) L. Ding, G. T. Zhou, Z. Ma, D. R. Morgan, J. S. Kenney, J. Kim, and C. R. Giardina, "Memory Polynomial Predistorter Based on the Indirect Learning Architecture," in *Proc. IEEE Globecom*, Nov. 17-21, 2002, pp. 967-71.
- 28) D. S. Kim, Y. S. Choi, M. Ahn, M. G. Allen, J. S. Kenney, and D. Kiesling, "S-Band Ferroelectric Phase Shifters with Continuous 180° and 360° Phase Shift Range," in *2002 Asia Pacific Microwave Symp. Dig.*, Nov. 18-20, 2002.
- 29) Y. K. Yoon, D.S. Kim, M. G. Allen, and J. S. Kenney, "A Reduced Intermodulation Distortion Tunable Ferroelectric Capacitor: Architecture and Demonstration," in *2003 IEEE MTT-S Int. Microwave Symp. Dig.* June 10-12, 2003, pp. 1989-92.
- 30) R. Sperlich, J.A. Sills, and J. S. Kenney, "Closed-Loop Digital Pre-Distortion for Power Amplifier Linearization using Genetic Algorithms," in *2003 IEEE MTT-S Int. Microwave Symp. Dig.*, June 10-12, 2003, pp. 347-50.
- 31) H. Ku and J. S. Kenney, "Behavioral Modeling of RF Amplifiers Considering IMD and Spectral Regrowth Asymmetries," in *2003 IEEE MTT-S Int. Microwave Symp. Dig.*, June 10-12, 2003, pp. 799-803.
- 32) Y. C. Park, K. M. Low, and J. S. Kenney, "Digital Predistortion Linearization of Frequency Multipliers," in *2003 IEEE MTT-S Int. Microwave Symp. Dig.*, June 10-12, 2003, pp. 1695-98.
- 33) W. Woo, E. Park, K. U-yen, and J. S. Kenney, "Wideband Predistortion Linearization System for RF Power Amplifiers using an Envelope Modulation Technique," in *Proc. 2003 IEEE Radio and Wireless Conf.*, Boston, MA, Aug. 10-13, 2003, pp. 401-04.
- 34) K. U-yen and J. S. Kenney, "An Optimization Technique for Low-Loss $n \times m$ Microwave Switch Matrices," in *Proc. 2003 IEEE Radio and Wireless Conf.*, Boston, MA, Aug. 10-13, 2003, pp. 341-45.
- 35) M. Ahn, G. Quillard, D.S. Kim, and J. S. Kenney, "Design and Implementation of a Ferroelectric Smart Antenna System for 802.11b WLANs," in *Proc. 2003 IEEE Radio and Wireless Conf.*, Boston, MA, Aug. 10-13, 2003, pp. 135-39.
- 36) D. S. Kim, S.S. Je, and J. S. Kenney, "A Compact Ferroelectric Phase Shifter Using Lumped-Element Quarter-Wave-Length Transmission Lines," in *Proc. 2003 IEEE Radio and Wireless Conf.*, Boston, MA, Aug. 10-13, 2003, pp. 309-12.
- 37) S. S. Je, D. S. Kim, J. S. Kenney, and T. Polley, "Effects of Annealing and Sintering on the Structural and Electrical Properties of $\text{Ba}_{0.6}\text{Sr}_{0.4}\text{TiO}_3$ Thin Films Grown on Sapphire by Combustion Chemical Vapor Deposition (CCVD)," in *Proc. 2003 Asia-Pacific Microwave Conf.*, Nov. 4-7, 2003, Seoul, South Korea.
- 38) H. Ku and J. S. Kenney, "Analysis of Error Vector Magnitude for Nonlinear Power Amplifier with p-th Order Inverse Predistorter," in *Proc. 2003 Asia-Pacific Microwave Conf.*, Nov. 4-7, 2003, Seoul, South Korea.

- 39) D. S. Kim and J. S. Kenney, "Tunable $\text{Ba}_{0.6}\text{Sr}_{0.4}\text{TiO}_3$ Interdigital Capacitors for Microwave Applications," in *Proc. 2003 Asia-Pacific Microwave Conf.*, Nov. 4-7, 2003, Seoul, South Korea.
- 40) Y. C. Park and J. S. Kenney, "Subsampling Architecture for Adaptive Digital Predistortion of Frequency Multipliers," in *Proc. 2003 Asia-Pacific Microwave Conf.*, Nov. 4-7, 2003, Seoul, South Korea.
- 41) J. S. Kenney, W. Woo, M. D. McKinley, and H. Ku, "Practical Limitations of Predistortion Linearization Systems for RF Power Amplifiers," in *Proc. 2003 Asia-Pacific Microwave Conf.*, Nov. 4-7, 2003, Seoul, South Korea **(Invited)**.
- 42) M. D. McKinley, Y. C. Park, H. Ku, and J. S. Kenney, "Obtaining Accurate IMD Variation and Imbalance Measurements for Identifying Memory Effects in High-power Amplifiers," in *62nd Automatic RF Techniques Group Conf. Dig.*, Dec. 3-5, 2003, Boulder, CO, pp. 77-80.
- 43) J. S. Kenney, "Technologies for Reconfigurable Transmitters for Next Generation Handsets," in *2004 Wireless and Microwave Technology Conference Dig.*, Apr. 15-16, 2004, Clear Water, FL, **(Invited)**.
- 44) D. S. Kim, S. S. Je, J. S. Kenney, and P. Marry, "Design of Ferroelectric Phase Shifters for Minimum Performance Variation over Temperature," *2004 IEEE MTT-S Int. Microwave Symp. Dig.*, June 6-10, 2004, Ft. Worth, TX, pp. 257-60.
- 45) W. Woo and J. S. Kenney, "Predistortion Linearization System for High Power Amplifiers," *2004 IEEE MTT-S Int. Microwave Symp. Dig.*, June 6-10, 2004, Ft. Worth, TX, pp. 677-80.
- 46) R. Sperlich, Y. C. Park, G. Copeland, and J. S. Kenney, "Power Amplifier Linearization with Digital Pre-Distortion and Crest Factor Reduction," *2004 IEEE MTT-S Int. Microwave Symp. Dig.*, June 6-10, 2004, Ft. Worth, TX, pp. 669-72.
- 47) Y. C. Park, R. Melville, R. C. Frye, M. Chen, and J. S. Kenney, "Dual-band Transmitters of using Digitally Predistorted Frequency Multipliers for Software Defined Radios," *2004 IEEE MTT-S Int. Microwave Symp. Dig.*, June 6-10, 2004, Ft. Worth, TX, pp. 547-50.
- 48) K. U-yen and J. S. Kenney, "A Low-Loss High-Reliability Microwave Switch Matrix for Smart Antenna Systems," *2004 IEEE MTT-S Int. Microwave Symp. Dig.*, Ft. Worth, TX, pp. 1125-28.
- 49) J. H. Chen and J. S. Kenney, "An Envelope Elimination and Restoration Power Amplifier Using a CMOS Dynamic Power Supply Circuit," *2004 IEEE MTT-S Int. Microwave Symp. Dig.*, June 6-10, 2004, Ft. Worth, TX, pp. 1519-22.
- 50) H. Ku and J. S. Kenney, "Analysis of ACPR Performance for Memoryless Predistorter Considering Power Amplifier Memory Effects," *2004 IEEE MTT-S Int. Microwave Symp. Dig.*, June 6-10, 2004, Ft. Worth, TX, pp. 1683-87.
- 51) K. U-yen, M. Ahn, Z. J. Zhang, and J. S. Kenney, "Effects of Microwave Switch Isolation on a Butler Matrix Beam-forming Network in Smart Antenna Systems," *Proc. 2004 IEEE Radio and Wireless Conf.*, Sep. 19-22, 2004, Atlanta, GA, pp. 67-70.
- 52) M. Ahn, D. Kim, and J. S. Kenney, "Throughput Improvement in Interference Limited Multipath Environments using a Ferroelectric Smart Antenna for IEEE 802.11b WLAN," *Proc. 2004 IEEE Radio and Wireless Conf.*, Sep. 19-22, 2004, Atlanta, GA, pp. 411-14.
- 53) W. Woo and J. S. Kenney, "A New Envelope Predistortion Linearization Architecture for Handset Power Amplifiers," *Proc. 2004 IEEE Radio and Wireless Conf.*, Sep. 19-22, 2004, Atlanta, GA, pp. 175-78.
- 54) R. Sperlich, J. A. Sills, and J. S. Kenney, "Power Amplifier Linearization with Memory Effects Using Digital Pre-distortion and Genetic Algorithms," *Proc. 2004 IEEE Radio and Wireless Conf.*, Sep. 19-22, 2004, Atlanta, GA, pp. 355-58.
- 55) M. McKinley, K. A. Remley, M. Myslinski, J. S. Kenney, D. Schreurs, and B. Nauwelaers, "EVM Measurements for Broadband Modulated Signals," in *64th Automatic RF Techniques Group Conf. Dig.*, Dec. 2004, Orlando, FL, pp. 45-52.

- 56) W. Woo and J. S. Kenney, "A Predistortion Linearization System for High Power Amplifiers with Low Frequency Envelope Memory Effects," *2005 IEEE MTT-S Int. Microwave Symp. Dig.*, June 12-17, 2005, Long Beach, CA, 1545-48.
- 57) R. Sperlich, J.A. Sills, and J.S. Kenney, "Closed-Loop Digital Pre-Distortion with Memory Effects Using Genetic Algorithms," *2005 IEEE MTT-S Int. Microwave Symp.*, June 12-17, 2005, Long Beach, CA, pp. 1557-60.
- 58) J. S. Kenney, Y. K. Yoon, D. S. Kim, M. Ahn, M. G. Allen, Z. Zhao, X. Wang, A. Hunt, and D. S. Kim, "Low-Voltage Ferroelectric Phase Shifters from L- to C-Band," in *2006 IEEE Aerospace Conf. Dig.*, Mar. 3-5, 2006, Big Sky, MT.
- 59) J. S. Kenney, "RF Power Amplifier Linearization and Efficiency Improvement Techniques for Commercial and Military Applications," in the *2006 Microwave and Communication Conf. (MIKOM) Dig.*, May 22-24, 2006, Krakow, Poland (**Invited**), pp. 3-8.
- 60) J. S. Kenney and P. Fedorenko, "Identification of RF Power Amplifier Memory Effect Origins using Third-Order Intermodulation Distortion Amplitude and Phase Asymmetry," *2006 IEEE MTT-S Int. Microwave Symp. Dig.*, June 13-18, 2006, San Francisco, CA, pp. 1121-24.
- 61) J. H. Chen, and J.S. Kenney, "A Crest Factor Reduction Technique for W-CDMA Polar Transmitters," in the *Proc. 2007 IEEE Radio and Wireless Symp.*, Long Beach, CA, Jan. 9-11, 2007, pp. .
- 62) C. Zhao, R. J. Baxley, G. T. Zhou, D. Boppana, and J. S. Kenney, "Constrained Clipping for Crest Factor Reduction in Multiple-user OFDM," in the *Proc. 2007 IEEE Radio and Wireless Symp.*, Long Beach, CA, Jan. 9-11, 2007.
- 63) S. Seo, H. Choi, J. S. Lim, Y. C. Jeong, and J. S. Kenney, "A Novel Design of a Frequency Tripler Using Composite Right/Left Handed Transmission Line," in the *2007 IEEE MTT-S Int. Microwave Symp. Dig.*, June 4-7, 2007, Honolulu, HI.
- 64) H. Choi, Y. C. Jeong, J. S. Kenney, and C. D. Kim, "Cross Post-distortion Balanced Power Amplifier," in the *2007 IEEE MTT-S Int. Microwave Symp. Dig.*, June 4-7, 2007, Honolulu, HI.
- 65) P. Fedorenko and J. S. Kenney, "Analysis and Suppression of Memory Effects in Envelope Elimination and Restoration (EER) Power Amplifiers," in the *2007 IEEE MTT-S Int. Microwave Symp Dig.*, June 4-7, 2007, Honolulu, HI.
- 66) N. Safari, P. Fedorenko, J. S. Kenney, T. Røste, "Spline-Based Model for Digital Predistortion of Wide-Band Signals for High Power Amplifier Linearization," in the *2007 IEEE MTT-S Int. Microwave Symp. Dig.*, June 4-7, 2007, Honolulu, HI.
- 67) S. Jeong, H. Choi, Y. Jeong, J. S. Kenney, and C. Kim, "A High Efficiency Distributed Amplifier Using Optimum Transmission Line," in the *2007 European Conf. on Wireless Techn. Dig.* Oct. 2007.
- 68) S. Seo, Y. Jeong, and J. S. Kenney, "A Modified CMOS Frequency Doubler Considering Time Matching Condition," in the *2007 Int. Symp. Techn. Convergence Dig.* Nov. 2007.
- 69) H. J. Choi, Y. C. Jeong, and J. S. Kenney, "Dual-band Feedforward Linear Power Amplifier Using Equal Group Delay Signal Canceller," in *2007 Asia Pacific Microwave Symp. Dig.*, Dec. 11-14, 2007.
- 70) K. Song, S. Seo, J. Lim, Y. C. Jeong and J. S. Kenney, "A Novel Design of Frequency Multipliers Using Composite Right/Left Handed Transmission Line and Defected Ground Structure," in *2007 Asia Pacific Microwave Symp. Dig.*, Dec. 11-14, 2007, pp. 16-19.
- 71) D. S. Douglas and J. S. Kenney, "Estimation and Adaptive Control of the DC Component of Impulse Sensitivity Functions in CMOS LC Oscillators," in the *2008 IEEE Radio and Wireless Symp.*, Jan. 22-24, 2008, Orlando, FL.
- 72) F. Ramirez, R. Melville, A. Suarez, and J. S. Kenney, "Nonlinear Analysis and Design of Frequency Selective Limiters Based on Parametric circuits," in *2008 IEEE MTT-S International Microwave Symposium Digest*, 15-20 June 2008, pp. 947 – 950.

- 73) K. Song, H. J. Choi, C. D. Kim, J. S. Kenney, and Y. C. Jeong, "Delay Matching Compensated CMOS Microwave Frequency Doubler," in *Microwave Conference, 2008. EuMC 2008. 38th European*, 27-31 Oct. 2008, pp. 464 – 467.
- 74) C. Devlin, A. Zhu, J. S. Kenney, and T. J. Brazil, "Peak Reduction Technique for Sigma-Delta Modulator in the Envelope Path of Polar Transmitter," in the *European Conf. on Wireless Techn.*, Oct. 26-28, 2008, Amsterdam, Netherlands, pp. 206-09.
- 75) J. S. Kenney, "Behavioral Modeling for Polar Transmitters," in the *2009 WAMICON Conf. Dig.*, April 20-21, 2009, Clearwater, FL, **(Invited)**.
- 76) J. S. Kenney, "History and Future Trends in RF Power Amplifier Linearization," in the *2009 WAMICON Conf. Dig.*, April 20-21, 2009, Clearwater, FL, **(Invited Keynote)**.
- 77) H. Fraz and J. S. Kenney, "Characterization of Dynamic Nonlinearity in ADCs using a Wavelet Network," in the *2009 WAMICON Conf. Dig.*, April 20-21, 2009, Clearwater, FL, pp. 1-4.
- 78) B. Gray, R. E. Melville, and J. S. Kenney, "Behavioral Modeling and Simulation of a Parametric Power Amplifier," in *2009 IEEE MTT-S Int. Microwave Sym. Dig.* June 7-12, 2009, Boston, MA, pp. 1373-76.
- 79) M. Omer, M. Sajadieh, and J. S. Kenney, "A Fast Converging Adaptive Pre-distorter for Multi-Carrier Transmitters," in *2009 Int. Comm. Conf.* June 14-18, 2009, Dresden, Germany. pp. 1-6.
- 80) M. D. McKinley, K. A. Remley, J. S. Kenney, M. Myslinski, G. Koepke, D. Camell, and R. T. Johnk, "Comparison of QPSK and 64QAM EVM for an OFDM WLAN Signal at 2.4 GHz and 4.9 GHz in a Multipath Environment," in *2009 Antennas and Propagation Society International Symposium Dig.*, June 1-5, 2009.
- 81) H. Fraz, N. Bjorsell, J. S. Kenney, and R. Sperlich, "Prediction of Harmonic Distortion in ADCs using Dynamic Integral Non-Linearity Model," in *2009 Behavioral Modeling and Simulation Workshop Dig.*, Sep. 17-19, 2009, San Jose, CA, pp.102-107.
- 82) M. Masood, and J. S. Kenney, "RF Power Amplifier Modeling for Three-Port Applications Using Polynomials with IIR Bases Functions," in *2010 IEEE Radio and Wireless Symp. Dig.*, Jan. 11-13, 2010, New Orleans, LA.
- 83) J. S. Kenney, "Parametric Power Amplifiers: Old Ideas, New Technologies," in *2010 Wireless and Microwave Conference Dig.*, April 10-12, 2010, Melbourne, FL **(Invited)**.
- 84) M. Masood, B. Gray, R. Melville, M. Omer, and J.S. Kenney, "Modeling and Linearization of a Parametric Power Amplifier," in *Proc. 40th European Microwave Conference*, Sep. 26-30, 2010, Paris, France.
- 85) F. Munir, M. Omer, M. Masood, and J. S. Kenney, "Joint Circuit and System Evaluation of Nonlinear Compensation in RF/Microwave Front-ends," in the *2011 WAMICON Conf. Dig.*, April 18-19, 2011, Clearwater, FL.
- 86) M. Omer, R. Rimini, P. Heidemann, and J. S. Kenney, "A Compensation Scheme to Allow Full-duplex Operation in the Presence of Highly Nonlinear Microwave Components for 4 G Systems," in *2011 IEEE MTT-S Int. Microwave Sym. Dig.*, June 6-9, 2011, Baltimore, MD.
- 87) K. S. Lee; S. Beck; H. Jeon; Y. Yoon; J. Choi; C. H. Lee; J. S. Kenney, "A 45nm SOI-CMOS PLL with a wideband LC-VCO," 2011 IEEE 54th International Midwest Symposium on Circuits and Systems (MWSCAS).
- 88) M. Omer and J. S. Kenney, "A Mixed Signal Spectrum Clearing System for Radio Co-existence with High Power Jamming," in *Proc. 2011 MILCOM*, Nov. 7-10, 2011 Baltimore, MD.
- 89) B. Gray, M. Pontón, A. Suárez, J. S. Kenney, "Analytical Modeling of Transducer Gain and Gain Compression in Degenerate Parametric Amplifiers," in *2012 IEEE Radio and Wireless Symp. Dig.*, Jan. 15-18, 2012, Santa Clara, CA, pp. 351-4.
- 90) M. Masood, J. Staudinger, J. Wood, M. Bokatijs, and J. S. Kenney "Linearity Considerations for a High Power Doherty Amplifier" in *2012 IEEE Topical Conference on RF/microwave Power Amplifiers Dig.* Jan. 14-15, 2012, Santa Clara, CA.

- 91) M. Masood, J. Wood, J. Staudinger, and J. S. Kenney, "Behavioral Modeling of High Power RF Amplifiers Using Pruned Volterra Scheme with IIR Basis Functions, in *2012 IEEE Topical Conference on RF/microwave Power Amplifiers Dig.* Jan. 14-15, 2012, Santa Clara, CA.
- 92) K. S. Lee; S. Beck; H. Jeon; Y. Yoon; J. Choi; C. H. Lee; and J. S. Kenney, "A 45nm SOI-CMOS PLL with a wideband LC-VCO" in *2011 IEEE 54th International Midwest Symposium on Circuits and Systems Dig.* pp. 1-4.
- 93) M. Omer, R. Rimini, P. Heidmann, and J. S. Kenney, "A PA-Noise Cancellation Technique for Next Generation Highly Integrated RF Front-Ends," in *IEEE RFIC Symp. Dig.*, June 16-17, 2012, Montreal, Canada.
- 94) M. Omer, and J. S. Kenney, "All Digital Compensation Scheme for Spur Induced Transmit Self-Jamming in Multi-Receiver RF Front-Ends," in *2012 IEEE International Microwave Symp. Dig.*, June 19-21, 2012, Montreal, Canada.
- 95) B. Gray, M. Masood, J. Galloway, R. Caplin, and J. S. Kenney, "Microdegree Frequency and Phase Difference Control Using Fractional-N PLL Synthesizers," in *2012 IEEE International Microwave Symp. Dig.*, June 19-21, 2012, Montreal, Canada.
- 96) M. Ponton, B. Gray, A. Suarez, and J. S. Kenney, "In-depth Stability Analysis of Degenerate Parametric Amplifiers," in *2012 IEEE International Microwave Symp. Dig.*, June 19-21, 2012, Montreal, Canada.
- 97) M. Cho, and J. S. Kenney, "Variable Phase Shifter Design for Analog Predistortion Power Amplifier Linearization System," in *Proc. 2013 IEEE Wireless and Microwave Conference*, April 7-9, 2013, Orlando, Florida.
- 98) M. Omer, R. Rimini, P. Draxler, J. S. Kenney, "Interference cancellation for odd harmonics of envelope tracking RF power amplifier systems" in *2013 IEEE International Microwave Symp. Dig.*, June 3-6, 2013, Seattle, Washington.
- 99) M. Cho, J. S. Kenney, "A Fast, Accurate and Digitally Calibrate-able Logarithmic Amplifier for Analog Predistortion Power Amplifiers," in *Proc. IEEE Asia-Pacific Microwave Conference (APMC)*, Nov. 2014, pp. 113-115
- 100) M. Cho, J. S. Kenney, "Band-Shaped Analog Peak-to-Average Power Ratio Reduction," in *Proc. IEEE Radio and Wireless Symposium (RWS)*, Jan. 2015.
- 101) K. L. Tokuda, J. S. Kenney, and L. S. Cohen, "Receiver Cancellation of Radar in Radio," in *Proc. IEEE Radio and Wireless Symposium (RWS)*, Jan. 2015, San Diego, CA.
- 102) J. P. Carem, J. Galloway, and J. S. Kenney, "Harmonic Ring Oscillator Time-to-Digital Converter," in *Proc. IEEE International Symposium on Circuits and Systems*, May, 2015.
- 103) J. P. Carem, J. S. Kenney, and J. Galloway, "A phase locked loop used as a digitally-controlled oscillator for flexible frequency synthesis," in *Proc. 2015 IEEE Wireless and Microwave Conference*, Cocoa Beach, FL.

C. Other Publications

- 1) J. S. Kenney, "SAW Oscillator uses Leads as Inductors," *EDN Magazine*, pp. 268-70, Sep. 1989.
- 2) R. Hauck, J. S. Kenney, and P. McIntyre, "Headroom is the Name of The Game in Multicarrier Amplifier Design," *Wireless Systems Design*, pp. 29-31, Aug. 1999.
- 3) J. S. Kenney and S. A. Avis, "The Relationship between IMD and ACPR," *Wireless Design and Development*, pp. 7-8, Sep. 2000.
- 4) J. S. Kenney, contributing author to "Microwaves: From Your Kitchen to the Edges of the Universe," an online publication which is part of the *IEEE Virtual Museum*, <http://www.ieee-virtual-museum.org>, Mar. 2003.
- 5) J. S. Kenney, "Challenges and Opportunities in Microwave Education," *IEEE MTT-S Microwave Magazine*, Vol. 5, No. 2, pp. 101-02, June, 2004.

- 6) J. S. Kenney and K. Varian, "The Future and a Active and Fruitful Year (President's Column)," *IEEE MTT-S Microwave Magazine*, Vol. 8, No. 1, pp. 10-14, Feb. 2007.
- 7) J. S. Kenney, "Membership and the Value of the Network (President's Column)," *IEEE MTT-S Microwave Magazine*, Vol. 8, No. 2, pp. 10-12, April, 2007.
- 8) J. S. Kenney, "The Bandwidth of Being There (President's Column)," *IEEE MTT-S Microwave Magazine*, Vol. 8, No. 3, pp. 10, 48, June, 2007.
- 9) J. S. Kenney, "Preserving MTT-S Integrity (President's Column)," *IEEE MTT-S Microwave Magazine*, Vol. 8, No. 4, pp. 14-16, August, 2007.
- 10) J. S. Kenney, "MTT-S Membership Longevity and Retention (President's Column)," *IEEE MTT-S Microwave Magazine*, Vol. 8, No. 5, pp. 8-10, October, 2007
- 11) J. S. Kenney, "How Does the IEEE Work? (President's Column)," *IEEE MTT-S Microwave Magazine*, Vol. 8, No. 6, pp. 14-16, December, 2007.
- 12) J. S. Kenney and J. Modelski, "New Leadership! (President's Column)," *IEEE MTT-S Microwave Magazine*, Vol. 9, No. 1, pp. 14-16, February, 2008.

D. Presentations

D.3 Conference Presentations without Proceedings

- 1) J. S. Kenney and A. Leke, "Design Considerations for Multicarrier Power Amplifiers for Use in CDMA Base Stations," presented at the 1998 Wireless Information Technology Conference, Orlando, FL, Sept. 21, 1998.
- 2) J. S. Kenney, "Behavioral Modeling for RF and Mixed-Signal Systems," presented at the Texas Instruments System Hardware Design Symposium and Exhibition, May 25-26, 2004, Dallas, TX.

D.4 Seminar Presentations

- 1) J. S. Kenney and W. D. Hunt, "Applications of HACT Devices in Mobile Communication Systems," Bell Northern Research University Forum, Ottawa, Canada, Feb. 5, 1993.
- 2) J. S. Kenney, "Spectral Regrowth in Narrowband Microwave Power Amplifiers," Santa Clara Valley Chapter Meeting of the IEEE Microwave Theory and Techniques Society, Santa Clara, CA, November 16, 1995.
- 3) J. S. Kenney, *et al.*, "A Panel Discussion on Advanced Semiconductor Technology for Wireless Communications," presented at Wireless Communications Alliance, Santa Clara, CA, July 7, 1997 (**Invited**).
- 4) J. S. Kenney, "Technology Barriers for 4G Base Station Transmitters," 1999 NIST ATP National Meeting Workshop, Track 4: Electronics and Photonics, Nov. 17, 1999 (**Invited**).
- 5) J. S. Kenney, "Future Directions in Radio Design for Wireless Information Systems," Georgia Tech ECE Graduate Seminar, January 19, 2000.
- 6) J. S. Kenney, "RF Design and Analog Design: When Worlds Collide," Georgia Tech Analog Consortium Board Review, March 25, 2000.
- 7) J. S. Kenney, "Technology Enablers for Broadband Wireless Access," Yamacraw Industrial Advisory Board Review, April 28, 2000.
- 8) J. S. Kenney and A. Cova, "Device Level Behavioral Modeling for Microwave Components," presented at the 2000 IEEE MTT-S Int. Microwave Symp. Workshop, Boston, MA, June 10, 2000 (**Invited**).
- 9) J. S. Kenney, "Overview of Linearization Options for High Data Rate Wireless Communications," presented at the Monday Workshop: Methods and Concepts for Power Amplifier Linearization, 2001 IEEE Radio and Wireless Symp., Waltham, MA, Aug. 20, 2001, (**Invited**).
- 10) J. S. Kenney, "Nonlinear Microwave Education – Extrapolating Beyond S-Parameters," presented at the 2002 IEEE MTT-S Int. Microwave Symp., Seattle, WA, June 2, 2002.

- 11) J. S. Kenney, "RF Components Roadmap," presented at the National Electronics Manufacturing Initiative June Workshop, Washington, D.C., June 19, 2002 **(Invited)**.
- 12) J. S. Kenney (Moderator), P. Draxler, L. Chinitz, J. Cleveland, and C. Mathias, "3G Cellular vs. 802.11 WLAN: Convergence or Co-existence?" 2002 IEEE Radio and Wireless Conf. Panel Session, Boston, MA, Aug. 11-14, 2002.
- 13) J. S. Kenney, Y. C. Park, and W. Woo, "Advanced Architectures for Predistortion Linearization of RF Power Amplifiers," 2002 IEEE Topical Workshop on Power Amplifiers, University of California at San Diego, La Jolla, CA, Sep. 9-10, 2002, **(Invited)**.
- 14) H. Ku and J. S. Kenney, "Analysis of Performance for Memoryless Predistortion Linearizers Considering Power Amplifier Memory Effects," 2003 IEEE Topical Workshop on Power Amplifiers, University of California at San Diego, La Jolla, CA, Sep. 10-11, 2003.
- 15) J. S. Kenney, "Measurement Issues in the Characterization of Memory Effects in RF Power Amplifiers," Nonlinear Measurements Workshop at the 62nd Automatic RF Test Group Conference, Boulder, CO, Dec. 3-5, 2003, **(Invited)**.
- 16) J. S. Kenney, "Mixed-Signal Design in the Development of Reconfigurable Mobile Radio Architectures," presented in "Workshop WMA: Wireless Design and Measurement Accuracy: State of the Art and Future Needs for the Communications Industry," at the 2004 International Microwave Symposium, Ft. Worth, TX, June 6-11, 2004 **(Invited)**.
- 17) J. S. Kenney, "Baseband Digital Predistortion Including Look-up Table Versus Model-Based Approaches" presented in "Workshop WMD: Distortion Correction of High Power Amplifiers using Digital Signal Processing" at the 2004 IEEE MTT-S International Microwave Symposium, Ft. Worth, TX, June 6-11, 2004 **(Invited)**.
- 18) J. S. Kenney, "RF Components Roadmap," presented at the National Electronics Manufacturing Initiative June Workshop, Washington, D.C., June 23, 2004 **(Invited)**.
- 19) H. Qian, L. Ding, G. T. Zhou, and J. S. Kenney, "Predistortion Linearization Results for Power Amplifiers with Memory Effects," presented at the 2004 IEEE Topical Workshop on Power Amplifiers, University of California at San Diego, La Jolla, CA, Sep. 13-14 2004.
- 20) J. S. Kenney, "Advances in System Level Simulation for Adaptive and Reconfigurable Radios," presented at the Intel RF Platform Integration Workshop," Hillsboro, OR, Oct. 28-29, 2004 **(Invited)**.
- 21) J. S. Kenney, "Advances in RF Power Amplifier Linearization and Modeling Techniques for Modern Wireless Transmitters," presented at North Carolina State University, Raleigh, NC, April 13, 2005 **(Invited)**.
- 22) P. Fedorenko and J. S. Kenney, "Measurement of Relative Phase and Magnitude of Third Order IMD Components for Identification and Characterization of RF Power Amplifier Memory Effects," presented at the 2006 IEEE Topical Workshop on Power Amplifiers, Jan. 16, 2006, San Diego, CA.
- 23) J. S. Kenney, "Integrated Analog Techniques for Pre-Distortion Linearization of RF Power Amplifiers," presented in Workshop WSC at the 2006 IEEE MTT-S International Microwave Symposium, June 11, 2006, San Francisco, CA **(Invited)**.
- 24) J. S. Kenney, "Measurement and Quantification of Power Amplifier Memory Effects," presented in Workshop WSL at the 2006 IEEE MTT-S International Microwave Symposium, June 11, 2006, San Francisco, CA **(Invited)**.
- 25) J. S. Kenney, "Behavioral Modeling and Simulation Techniques," presented at the 2007 IEEE Topical Symposium on Power Amplifiers for Wireless Communications, January 9, 2007, Long Beach, CA **(Invited)**.
- 26) J. S. Kenney, "Power Amplifier Architectures for Radar-Comms Coexistence," presented at the 2015 International Microwave Symposium, May 22, 2015, Phoenix, AZ **(Invited)**.

E. Other Scholarly Accomplishments**Records of Invention, Patent Filings, and Patents**

- 1) J. S. Kenney and W. D. Hunt, "Acoustic Matching Networks for High Efficiency, High Bandwidth Transducers," Record of Invention, Office of Technology Licensing, Georgia Institute of Technology, March 13, 1991.
- 2) M. A. Ingram, K. H. Lee, and J. S. Kenney, "Sequential Signal Selection System and Method," GT Docket 2350, Patent applied for June 30, 2001, App. Ser. No. 09/896,080.
- 3) J.S. Kenney and G.T. Zhou, "A Technique for Wideband Predistortion Linearization of RF Multicarrier Power Amplifiers," GT Docket 2439, Provisional Patent (expired) filed by the Office of Technology Licensing, Georgia Institute of Technology, January 31, 2001.
- 4) J. Stone and J. S. Kenney, "A Digitally Programmable Amplifier with Linear Gain Steps," GT Docket 2761, Provisional Patent (expired) filed by the Office of Technology Licensing, Georgia Institute of Technology, September 25, 2002.
- 5) J. S. Kenney and Y. C. Park, "Predistortion Linearized Frequency Multipliers," Provisional Patent (expired) filed by the Office of Technology Licensing, Georgia Institute of Technology, January 7, 2003.
- 6) J. S. Kenney and W. Woo, "An Envelope Predistortion System Incorporating Memory Effect Compensation," Provisional Patent filed with the Office of Technology Licensing, Georgia Institute of Technology, May 5, 2004. Renewed, May 2005.
- 7) D. Douglas and J. S. Kenney, "An Estimator for the Condition of Minimal Flicker Noise Upconversion in Oscillators, and Method for Using Said Estimator to Minimize Flicker Noise Upconversion," Invention Disclosure 3998, Office of Technology Licensing, Georgia Institute of Technology.
- 8) A. T. Hunt, G. Allen, D. Kiesling, R. E. Schwerzel, Y. Jiang, F. A. Gladden, J. Wegman, Z. Zhao, M. S. Vinson, J. E. McEntyre, S. Flanagan, T. Polley, and J. S. Kenney, U.S. Patent 7,145,412, "Electronic and optical devices and methods of forming these devices," issued Dec. 5, 2006.
- 9) A. Masood, M. Omer, and J. S. Kenney "Low Complexity, Optimized Digital Doherty Transmitter for Handset Applications with Dual Lookup Table Digital Pre-distorter" provisional patent application 61/587,850 filed Jan. 18, 2012 by the Office of Technology Licensing, Georgia Institute of Technology (GTRC ID 5889).
- 10) A. Masood, M. Omer, and J. S. Kenney "Hybrid filter bank architecture for high efficiency envelope reconstruction in polar RF power amplifiers," provisional patent application 61/597,396, filed Feb. 10, 2012 by the Office of Technology Licensing, Georgia Institute of Technology (GTRC ID 5848).
- 11) S. C. Shen, A. Masood, and J. S. Kenney "Common-Mode Feedback for Radio-Frequency Push-Pull Power Amplifier Linearity Improvement," provisional patent application 61/651,242 filed May 24, 2012 by the Office of Technology Licensing, Georgia Institute of Technology (GTRC ID 5846).
- 12) A. Masood, M. Omer, and J. S. Kenney, "High Efficient Digital Doherty Transmitter for Handset Applications with Dual Lookup Table Digital Pre-distorter," provisional patent application 61/652,928 filed May 30, 2012 by the Office of Technology Licensing, Georgia Institute of Technology (GTRC ID 5890).
- 13) M. Omer, A. Masood, and J. S. Kenney, "High Efficiency, High Dynamic Range PWM Modulation using Feed-Forward Spur Cancellation," provisional patent application 61/665,034 filed July 3, 2012 by the Office of Technology Licensing, Georgia Institute of Technology (GTRC ID 5849).

- 14) M. Omer, A. Masood, and J. S. Kenney, "Adaptive Tuning of Hybrid Filter Banks for Efficient Operation of Envelope Modulator in Polar Transmitters" provisional patent application 61/667,694 filed July 3, 2012 by the Office of Technology Licensing, Georgia Institute of Technology (GTRC ID 5847).

V. SERVICE

A. Professional Contributions

Professional Memberships

- 1) Fellow of the Institute of Electrical and Electronics Engineers, class of 2008.
- 2) Senior Member of the Institute of Electrical and Electronics Engineers 2001-2007.
- 3) Member of the Institute of Electrical and Electronics Engineers 1983-2000.
- 4) Member of IEEE Microwave Theory and Techniques Society (MTT-S) since 1984.

Professional Leadership

- 1) Elected member of AdCom, international governing body of the MTT-S, 1998-2007.
- 2) MTT-S Treasurer for 2001-2003.
- 3) MTT-S President for 2007.
- 4) Past President (voting member) of MTT-S 2008-10.
- 5) Officer for the Santa Clara Valley Chapter of MTT-S, 1996-99.
- 6) Co-Chair, National Electronics Manufacturing Initiative, *RF Components Roadmap* Technical Working Group for 1998-2006.
- 7) Served on NSF/ECS review panel, May 14-16, 2010.

Conference Leadership

- 1) International Microwave Symposium (IMS) Steering Committees 1993 (Atlanta), 1996 (San Francisco), 2021 (to be held in Atlanta). Chair of Local Arrangements for the 2008 IMS. General Co-Chair for the IMS 2021.
- 2) IMS Technical Program Committee, Subcommittee on Nonlinear Circuit Analysis and Simulation, 1997-2004, 2010-11. Appointed as Subcommittee Chair for 2001-03.
- 3) Technical Program Co-Chair for the 58th Automatic RF Test Group Conference, held Nov. 29-30, 2001 in San Diego, CA.
- 4) Technical Program Co-Chair for the 2002 Radio and Wireless Conference (RAWCON), held Aug. 11-14, 2002, in Boston, MA.
- 5) General Co-Chair, for the 2003 Radio and Wireless Conference (RAWCON), held Aug. 10-13, 2003 in Boston, MA.
- 6) General Co-Chair, for the 2004 Radio and Wireless Conference (RAWCON), held Sep. 19-22, 2004 in Atlanta, GA.

Editorial Activity

- 1) Editorial Board, *IEEE Transactions on Microwave Theory and Techniques*, 1998-present.
- 2) Editorial Board, *IEEE Microwave and Wireless Component Letters* (formerly the *Microwave and Guided Wave Letters*), 1998-present.

School Committees

- 1) ECE Seminar Committee, 2000-2001 Academic Year.
- 2) ECE Graduate Committee, 2001-2004 Academic Years, Chair 2005-2010 Academic Years.
- 3) ECE Statutory Committee, 2010-2011 Academic Years.
- 4) ECE Graduate Recruiting Committee, 2011-2012 Academic Years.
- 5) ECE Undergraduate Committee, 2013-2014 Academic Years.

Campus Organizations

- 1) Advisory Board, Tau Kappa Epsilon Fraternity, Beta Pi Chapter, 2002-present.

C. Other Contributions

C1. Consulting Activities

- 1) Technical Advisory Board, nGiMat, Inc. (formerly Microcoating Technologies, Inc.), Chamblee, GA, 2000-10.
- 2) Technical Advisory Board, Ultranetics, Inc., Atlanta, GA, 2000-01.
- 3) Consultant, Spectrian Corp., Multicarrier Power Amplifier Systems, Sunnyvale, CA, 1999-2001.
- 4) Consultant, Galleon Wireless Inc., Broadband Wireless Systems, Milpitas, CA, 2000.
- 5) Client: Dr. Rick Moore (plaintiff) represented by Harris & Helton, LLC, Cartersville, GA v. MCK Communications. Zoning issue for cell tower, 2001.
- 6) Consultant, Mohr, Davidow Ventures, Due Diligence Review for Smart Antenna Systems, Palo Alto, CA, 2001-02.
- 7) Consultant, Danam USA, San Jose, CA, Market Research for Basestation Power Amplifiers, 2002.
- 8) Expert Witness, Aholt & Rickard, LLP, Atlanta, GA, Cellular Communication Systems, 2001-02.
- 9) Consultant, Xetron Division of Northrop-Grumman, Cincinnati, OH, Power Amplifier Linearization Study, 2002-03.
- 10) Consultant, Raytheon, St. Petersburg, FL, Power Amplifier Linearization Study, 2003.
- 11) Technical Advisory Board, CardioMEMS Inc., 2003-2013.
- 12) Expert witness for Skyworks, Inc. (defendant) v. Qualcomm Inc., by Wilmer Cutler Pickering Hale and Dorr LLP, Washington, DC., 2004-05. U.S. Federal District Court, Central District of California, Southern Division
- 13) Expert witness for Broadcom, Inc. (plaintiff) v. Qualcomm, Inc., represented by Wilmer Cutler Pickering Hale and Dorr LLP, Washington, DC., 2005-06. U.S. Federal District Court, Central District of California, Southern Division, Case No. SACV05-467-JVS.
- 14) Technical Advisory Board, VT Silicon, Inc., 2006-11.
- 15) Consultant, Scintera Networks, Inc., Sunnyvale, CA, 2006-10.
- 16) Expert witness for Nokia, Inc. (defendant) v. Qualcomm, represented by Alston-Bird LLP, Atlanta, GA, and Quinn Emanuel Urquhart Oliver & Hedges LLP, Los Angeles, CA (co-counsel), 2006-07. U.S. International Trade Commission, Matter No. 337-TA-578, Hon. Paul J. Luckern.
- 17) Client: Mike Farmwald (individual), Santa Clara, CA, 2007 and 2014. IP analysis of a small publicly traded company.
- 18) Expert witness for Nokia, Inc. (plaintiff) v. Qualcomm, represented by Quinn Emanuel Urquhart Oliver & Hedges LLP, Los Angeles, CA, 2008, Court of Chancery, State of Delaware, Case No. 2330-N.
- 19) Expert witness for Nokia, Inc. (defendant) v. Interdigital Technology, LLC, represented by Alston-Bird LLP, Atlanta, GA, 2009, U.S. International Trade Commission, Matter No. 337-TA-613, Hon. Paul J. Luckern.
- 20) Client: EMS Technologies, Inc., Norcross, GA, 2010-11. Technical consulting.
- 21) Expert witness for Nokia, Inc. (plaintiff) v. Apple, Inc., represented by Alston & Bird, LLP, Atlanta, GA. U.S., 2010. International Trade Commission, Matter No. 337-TA-701, Hon. E. James Gildea.
- 22) Expert witness for Motorola Mobility, Inc. (plaintiff) v. Apple, Inc. represented by Quinn Emanuel Urquhart Oliver & Hedges LLP, New York, NY, 10010, 2011, International Trade Commission, Matter No. 337-TA-745, Hon. Paul J. Luckern.
- 23) Expert witness for Motorola Mobility, Inc. (plaintiff) v. Apple, Inc. represented by Quinn Emanuel Urquhart Oliver & Hedges LLP, New York, NY, 10010, 2011, U. S. Federal District Court, Northern District of Illinois, Case No. 1:11-CV-08540, Hon. Richard A. Posner.

- 24) Expert witness for RF Microdevices, Inc. and Motorola Mobility, Inc. (defendants) v. Peregrine Semiconductor, Corp., represented by Quinn Emanuel Urquhart Oliver & Hedges LLP, New York, NY, 10010, 2011, International Trade Commission, Matter No. 337-TA-848, Hon. E. James Gildea.
- 25) Expert witness for Nokia, Inc. (plaintiff, acquired by Microsoft) v. HTC Corp., represented by Desmarais, LLP, New York, NY, Alston & Bird, Atlanta, GA, LLP, Bird & Bird (UK), Nakamura & Partners (Japan), and Samson & Partners (Munich, Germany), International Trade Commission, Matter No. 377-TA-885, Hon. Theodore R. Essex, and related foreign cases.
- 26) Expert witness for RF Microdevices, Inc. and Motorola Mobility, Inc. (defendants) v. Peregrine Semiconductor, Corp., represented by Quinn Emanuel Urquhart Oliver & Hedges LLP, Redwood City, CA, U. S. Federal District Court, Southern California, Consolidated Case No. 3:12-cv-00911-H (JLB), Hon. Marilyn L. Huff.
- 27) Expert witness for Dell, Inc. (defendant), and Joint Defendants, v. MOSAID Technologies, Inc., represented by Quinn Emanuel Urquhart Oliver & Hedges LLP, San Francisco, CA, U. S. Federal District Court, Eastern District of Texas, Marshall Division, Civil Action No. 2:11-cv-00179, Hon. Michael H. Schneider.
- 28) Expert witness for Nokia, Inc. (defendant) v. Interdigital Technology, LLC, represented by Alston-Bird LLP, Atlanta, GA, 2015, U.S. International Trade Commission, Matter No. 337-TA-613 REMAND, Hon. Theodore R. Essex.
- 29) Expert Witness for Verizon Wireless v. Cell and Network Selection, LLC, Eastern District of Texas, Tyler Division, Case No. 6:13-CV-00563-KNM, Hon. J. Nicole Mitchell.

VI. Grants and Contracts

A. As Principal Investigator or Co-Principal Investigator

1)	Title:	Junior Chair in Analog Integrated Circuit Design
	Organization:	ON Semiconductor
	Contract Period:	10/1/99 to present
	Amount Requested:	\$184,570
	Amount Funded:	\$184,570 (through GTF)
2)	Title:	"Programmable SAW Filter Technology" (Co-PI with Prof. Hunt)
	Organization:	U.S. Army Research Lab
	Contract Period:	9/1/00 to 9/1/01
	Amount Requested:	\$219,777
	Amount Funded:	\$219,777
	Prof. Kenney's %:	50%
3)	Title:	"An RF Modem Chipset for In-Home Wireless Networks" (Co-PI Prof. Laskar)
	Organization:	National Semiconductor, Inc.
	Contract Period:	7/1/00-6/30/01
	Amount Requested:	\$75,000
	Amount Funded:	\$75,000 (through GTF)
	Prof. Kenney's %:	50%
4)	Title:	In Support of Research in Ferroelectric Microwave Devices

	Organization:	Microcoating Technologies, Inc.
	Contract Period:	7/1/00 to present
	Amount Requested:	\$12,000
	Amount Funded:	\$12,000 (through GTF)
5)	Title:	Equipment Grant in Support of Research in Cellular Base Station Systems
	Organization:	Ericsson, Inc.
	Contract Period:	1/24/01
	Amount Requested:	\$421,052 (market value)
	Amount Funded:	\$421,052
6)	Title:	Wideband Predistortion Linearization of RF Power Amplifiers (Co-PI Prof. Zhou)
	Organization:	Danam Communications, Inc.
	Contract Period:	7/1/01 – 11/30/03
	Amount Requested:	\$428,498
	Amount Funded:	\$428,498 + \$30,000 (Cost Sharing)
	Prof. Kenney's %:	70%
7)	Title:	S-Band Ferroelectric Phase Shifter
	Organization:	Microcoating Technologies, Inc. (Subcontract under Air Force Phase I SBIR)
	Contract Period:	5/7/01 – 2/7/02
	Amount Requested:	\$31,752
	Amount Funded:	\$31,752
8)	Title:	S-Band Ferroelectric Phase Shifter (Co-PI Prof. M. Allen)
	Organization:	Microcoating Technologies, Inc. (Subcontract under Air Force Phase II SBIR)
	Contract Period:	6/28/02 – 6/28/04
	Amount Requested:	\$149,646
	Amount Funded:	\$149,646
9)	Title:	Software Grant in Support of Power Amplifier Research
	Organization:	Agilent Technologies, Inc.
	Contract Period:	1/1/03-12/31/03
	Amount Requested:	\$74,000 (est. market value)
	Amount Funded:	\$74,000
10)	Title:	NSF/ITR: Characterization and Linearization of Memory Effects in RF Power Amplifiers (Co-PI Prof. Zhou)
	Organization:	National Science Foundation
	Contract Period:	9/1/02– 8/31/05
	Amount Requested:	\$255,000

	Amount Funded:	\$255,000
	Prof. Kenney's %:	40%
11)	Title:	Interference Mitigation in WLAN Networks using Ferroelectric Smart Antennas
	Organization:	Microcoating Technologies, Inc. and Yamacraw Commercialization Project.
	Contract Period:	7/1/02-6/30/04
	Amount Requested:	\$50,000 (MCT) + \$50,000 cost sharing (YCP) + \$50,000 in kind
	Amount Funded:	\$50,000 (MCT) + \$50,000 cost sharing (YCP) + \$50,000 in kind
12)	Title:	Throughput Improvement of Residential Wireless LAN Networks Using Smart Antenna Systems (Co-PI Prof. Ingram)
	Organization:	Georgia Tech Broadband Institute
	Contract Period:	8/1/02-7/31/03
	Amount Requested:	\$30,000
	Amount Funded:	\$30,000
	Prof. Kenney's %:	50%
13)	Title:	ON Semiconductor Chinese Visiting Professor – UESTC
	Organization:	ON Semiconductor
	Contract Period:	8/1/02-1/31/03
	Amount Requested:	\$44,000
	Amount Funded:	\$44,000
14)	Title:	ON Semiconductor Chinese Visiting Professor – Zhejiang Univ.
	Organization:	ON Semiconductor
	Contract Period:	8/1/02-1/31/03
	Amount Requested:	\$44,000
	Amount Funded:	\$44,000
15)	Title:	Throughput Improvement of Residential Wireless LAN Networks Using NIC-Based Smart Antenna Systems
	Organization:	Georgia Tech Broadband Institute
	Contract Period:	7/1/03-6/30/04
	Amount Requested:	\$20,000
	Amount Funded:	\$20,000
16)	Title:	Transistor Study
	Organization:	Cree Microwave
	Contract Period:	3/19/03 to 12/31/04
	Amount Requested:	\$10,000 (through GTF)
	Amount Funded:	\$10,000
17)	Title:	SBIR/STTR Phase II: Crystalline Ferroelectrics Combined with Transistor Technology
	Organization:	nGimat, Inc

		(Subcontract under National Science Foundation Phase II SBIR)
	Contract Period:	1/15/04 to 11/30/05
	Amount Requested:	\$131,055
	Amount Funded:	\$131,055
18)	Title	Microwave Power Amplifier Characterization
	Organization	VT Silicon, Inc.
	Contract Period:	2005-06
	Amount Requested:	\$25,777
	Amount Funded:	\$25,777
19)	Title:	Pulse-Matched Filtering for UWB Communications Using Passive Microwave Signal Processing
	Organization:	Georgia Tech Broadband Institute
	Contract Period:	8/15/04-6/30/04
	Amount Requested:	\$30,000
	Amount Funded:	\$30,000
20)	Title:	Investigations into Efficiency and Linearity Improvement for WiMax Base Stations using Advanced Digital Predistortion and Crest Factor Reduction Techniques
	Organization:	Altera Corp.
	Contract Period:	2005-06
	Amount Requested:	\$20,415 (through GTF)
	Amount Funded:	\$20,415
21)	Title:	Pulse-Matched Filtering for UWB Communications Using Passive Microwave Signal Processing
	Organization:	Georgia Tech Broadband Institute
	Contract Period:	8/15/04-6/30/04
	Amount Requested:	\$30,000
	Amount Funded:	\$30,000
22)	Title:	Analog-to-Digital Converter Linearization
	Organization:	Texas Instruments
	Contract Period:	2005-present
	Amount Requested:	\$57,000 (through GTF)
	Amount Funded:	\$57,000 to date
23)	Title:	Linear Power Amplifiers
	Organization:	RF Microdevices
	Contract Period:	2005-present
	Amount Requested:	\$54,000 (through GTF)
	Amount Funded:	\$54,000 to date
24)	Title:	Multiband Power Amplifiers
	Organization:	Jacket Microdevices

	Contract Period:	2006-07
	Amount Requested:	\$25,000 (through GTF)
	Amount Funded:	\$25,000 to date
25)	Title:	RF Power Amplifiers
	Organization:	VT Silicon
	Contract Period:	2008-present
	Amount Requested:	\$20,000 (through GTF)
	Amount Funded:	\$20,000 to date
26)	Title:	Adaptive Predistortion
	Organization:	Freescale
	Contract Period:	2006-present
	Amount Requested:	\$27,000 (through GTF)
	Amount Funded:	\$27,000 to date
27)	Title:	Analog Linearization Techniques
	Organization:	Scintera Networks
	Contract Period:	2009-present
	Amount Requested:	\$25,000 (through GTF)
	Amount Funded:	\$25,000
28)	Title:	Wideband Parametric Amplification Using Multiferroic Materials
	Organization:	DARPA/DSO
	Contract Period:	2009-2011
	Amount Requested:	\$298,146 + \$99,253 (extension)
	Amount Funded:	\$298,146 + \$99,253 (extension)
27)	Title:	Analog Predistortion Techniques
	Organization:	Hua Wei, Inc.
	Contract Period:	2010-present
	Amount Requested:	\$105,000 (through GTF)
	Amount Funded:	\$105,000
28)	Title:	CMOS Analog Predistortion Integrated Circuits
	Organization:	RF Microdevices
	Contract Period:	2011-present
	Amount Requested:	\$136,792.45 (GEDC Membership)
	Amount Funded:	\$136,792.45
30)	Title:	Oscillator and Phased-Locked Loop Research
	Organization:	Silicon Creations, Inc.
	Contract Period:	2013-present
	Amount Requested:	\$247,170 (GEDC Membership, \$200,000 in kind)
	Amount Funded:	\$247,170

B. As Investigator

Note: All funds indicated were allocated to Prof. Kenney.

1)	Title:	In Support of Research in Broadband Wireless Technology
	Organization:	Yamacraw Initiative
	Principal Investigator:	Prof. J. Laskar (Dir. Research)
	Contract Period:	1/1/00 to 7/15/02
	Amount Requested:	\$127,500
	Amount Funded:	\$127,500
2)	Title:	Intern Sponsorship
	Organization:	Intersil Corp. (through GT Analog Consortium)
	Principal Investigator:	Prof. A. Connelly (Director)
	Contract Period:	8/15/01 to 5/9/03
	Amount Requested:	\$17,273
	Amount Funded:	\$17,273
3)	Title:	PRC Digital Alliance
	Organization:	Packaging Research Center
	Principal Investigator:	Prof. M. Swaminathan (Thrust Leader)
	Contract Period:	8/15/02-8/5/03
	Amount Requested:	\$45,000
	Amount Funded:	\$45,000
4)	Title:	Epitaxial Multifunctional Materials and Applications
	Organization:	Office of Naval Research (MURI)
	Principal Investigator:	Prof. Alan Doolittle
	Contract Period:	2005-2009
	Amount Requested:	\$84,440
	Amount Funded:	\$84,400
5)	Title:	SSPARC
	Organization:	DARPA
	Principal Investigator:	Dr. Bob Baxley (GTRI)
	Contract Period:	Oct. 2013-Oct. 2014
	Amount Requested:	\$310,000
	Amount Funded:	\$310,000

VII. HONORS AND AWARDS

- 1) 1st Place, Student Paper Contest, 1993 International Microwave Symposium, Atlanta, GA, May 23, 1993.
- 2) RCR Gold Award for Best Paper, 1998 CDMA and PCS Technology Conference, Orlando, FL, September 21-22, 1998.
- 3) Honorable Mention, Student Paper Contest, 2003 International Microwave Symposium (as co-author), Philadelphia, PA, June 10-14, 2003. Student Presenter: Youngcheol Park.

- 4) 2nd Place, Student Paper Contest, 2003 International Microwave Symposium (as co-author), Philadelphia, PA, June 10-14, 2003. Student Presenter: Yong-Kyu Yoon.
- 5) Meritorious Service Award, IEEE Microwave Theory and Techniques Society, 2004, "In Recognition of Distinguished Service as 2001-2003 Treasurer."
- 6) Certificate of Recognition, IEEE Microwave Theory and Techniques Society, 2004, "For Contributions Made as Co-Chairman of the 2003 Radio and Wireless Conference."
- 7) Microwave Application Award, IEEE Microwave Theory and Techniques Society, 2005, "For development of power amplifier linearization techniques and insertion into cellular/wireless systems."
- 8) Fellow of the Institute of Electrical and Electronics Engineers, class of 2008 "For contributions to microwave power amplifier design, characterization, and linearization."
- 9) Best Paper Award at the 2010 Wireless and Microwave Conference (WAMICON), April 12-13, 2010, Melbourne, FL.